

COLMAN'S RURAL WORLD.

H. A. COLMAN, EDITOR.
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THE REVOLUTION IN FARM LIFE.

While it is true that public attention is usually attracted by the spectacular events of life, and often overlooks the all-important changes requiring years to complete, it can be said that the great change, amounting to a revolution in farm life, which is in progress at this spring time of the new century, is unobserved or its significance unappreciated by the thoughtful ones of either the rural or urban world. Dwellers in cities weary of the pace set in these modern times by ambitious strenuousness and realizing the artificiality and general unsatisfactoriness of life in crowded tenement houses looking with longing eyes toward the Eden for which the race, self-banished, still hopes and plans a paradise regained.

The rehabilitation of Briar Cliff Manor, near Poughkeepsie, N. Y., by members of the Smart Set, illustrates this feeling. The Smart Set is essentially imitative. The rank and file copy the imitation. The leaders, and the leaders unconsciously imitate the average. New York's four hundred has spent millions of dollars on country places, but not until recently have they taken up agricultural education as a fad.

It is no fiction to say that thousands of young men engaged in various pursuits would gladly pack up their household effects and move to the country. The nerve-racking conditions of city life for green fields and pastures new.

Much of this feeling is doubtless due to the nomadic instinct and the restlessness of certain natures which impels them to leave the evils which they have and fly to others they know not of. Much, however, is due to the inherent change in farm life already referred to.

The farmer himself is taking a more hopeful view of his case, and we hear little of that discontent which marked the rustic type of twenty years ago. The rural telephone, rural free delivery and the trolley lines are bringing so many of the advantages of the town to the country that a continuance of the revolution now taking place will in ten years make the farm the ideal home of the wealthy and of those with modest means.

To-day more than 4,000,000 farmers in the United States have daily mail delivered at their doors. As a result of this daily mail they are sending out an average of two letters where before they sent one. When rural free delivery was first proposed it was ridiculed as a fad, a new means of squandering the public money. It is now in operation in every state in the Union excepting Montana, where mountainous roads thus far have made it impracticable. Even in Alaska there is a route from Nome to Gold River. The department estimates that the present month \$600 routes will be in operation, averaging twenty-five miles in length. It is safe to predict that during the next five years every thickly settled farm section will have its daily mail.

The rural telephone is not so far along as rural mail delivery, and the trolley line is only being experimented with in the west. But who will dare to say that in ten years all the important farm roads in thickly settled communities will not be lined with wire and many of them laid with tracks?

Hilbert it has been the dream of the farmer to save enough to enjoy in the afternoon of life the conveniences and luxuries of town life. Already the change has been noticed. They are building new homes on the farm. With the facilities they now enjoy the town does not present so many attractions. The change has made their money out of the soil send it in improving and beautifying their farm homes we shall present to the world the truly ideal community.

As an element in this awakening, the influence of the individual development of the American farmer must not be forgotten. From the immigrant and pioneer he has struggled with the difficulties besetting a new enterprise; he has now come into his inheritance; he has fought the wilderness, plodded patiently through the years of preparation. Laying a foundation of character and culture, he has made possible the revolution in farm life, the flower of which is just beginning to unfold. The American farmer is today a personage; he is no longer a mere creature in a treadmill.

HARVESTING COWPEA HAY.

Last week we published an article on curing pea vine hay, written by a gentleman connected with the North Carolina Horticultural Society. The author advocated planting ten-foot poles in the field and stacking the freshly cut hay on these poles for curing. It is quite likely that this method would prove effective,

but it is extremely doubtful if farmers would find it practicable.

The pole-stacking scheme would, by its extra labor and expense, condemn the cowpeas as a profitable crop. There is a method, however, of handling cowpeas hay which is entirely practicable. It has the sanction of successful growers and is the method followed by the writer for the last five years.

In passing, it may be said that any coarse forage crop should be cured in the same manner.

When the first pods begin to ripen the cowpeas are ready to cut. Mow in the forenoon. In the afternoon rake and make up in small, compact piles. They should be carefully built high and narrow—say thirty inches height and about as wide at the bottom. This is continued day by day until the whole crop is cut. The vines, in a green, slightly wilted state, settle down, leaves overlapping, and, being heavy in the center and sloping evenly at the sides, make a perfect water shed; rain does not penetrate the mass. The piles should be left undisturbed until perfectly dry and cured. The sun and weather will bleach the outside, but the inside will be green and sweet. All hay should be air-cured, but not sun-dried; hence the advantage of raking while partly wilted and curing in the cock. Hay is allowed to cure in the swath it loses much of its value by bleaching, and the leaves shatter in raking. When dried and cured hay is put in piles it does not pack, and rain goes through it like a sponge. Hay stacks should always be topped off with green stuff—swale hay or coarse grass of some sort; this makes a solid waterproof roof, because it settles down, by its verdant weight, to a closely woven, compact mass.

The weather favors, cowpea hay will cure in four or five days, but if rain interferes the piles should be left undisturbed until dry. They may be left three weeks without injury.

When ready for hauling to the barn, if the vines are cured, damp, begin about ten o'clock and turn each cock over twice, and the whole mass will soon dry out. Care should be taken to not tear the piles apart; handle each one as a separate "wad" as far as possible in loading and placing in the mow. This keeps the leaves from shattering and the hay occupies less space in the mow and perhaps keeps better.

This system costs nothing for planting poles; there need be no worry on account of foul weather, except for such hay as may be left in the swath; the leaves, which constitute the best part of the plant, are preserved in the very best condition and loading and unloading is conducted with the most economical expenditure of labor. If the farmer has no horse-power hay fork, the hay can be peeled off the wagon in chunks, so to speak, by exercising a little care.

The value of cowpea hay in stock-feeding is better understood than ever before, and ignorance of a safe and practical method of harvesting has alone stood in the way of a larger use of this crop.

BY THE WAY.

Editor RURAL WORLD: "It never rains but it pours" has not been peculiar to the St. Louis district this season. I left St. Louis yesterday noon in a down-pour, and the weather welcomed me to New York this evening.

I came over the Big Four and New York Central. The corn crop through Illinois and Indiana is simply immense, and is now beyond damage from drought. The farmers in that section ought to feel happy, as they have, some time ago, also harvested magnificent crops of wheat, oats and hay.

The first streak of daylight this morning found our train east of Cleveland, Ohio. A very poor section for grain, but a splendid appearance of grapes on the almost continuous vineyards in the neighborhood of Erie and Dunkirk, where a light sandy soil predominates, very favorable for successful grape culture.

Oats are an enormous crop all the way from Buffalo to Albany, N. Y. The season has been cold and wet, which has been favorable for this cereal. The bulk of the crop is still in the shock; some has been saved and some still remains uncrushed. Western and Central New York is all of five weeks later than the St. Louis district this season.

Corn is away late and looks bad from cool weather and excess of moisture. Much of it will only be good for fodder, but the banner crop of cereals and hay will compensate for shortage of corn.

Peas in New York state look fresh, and cattle appear to be in good condition. The condition of the farms are much neater and thriftier looking than in Illinois and Indiana. Many of the farmers are already hauling out their farm manure and applying it to their stubbles. The enormous crops of oats which have been harvested and are now shocked on some patches on small mixed stock farms would be an object lesson to some of our western farmers, not only in the growing of a crop, but in the neat way a heavy twisted crop has been saved with a stubble as smooth and clean as a highway.

I met several farmers on the train, and they report the apple crop late and poor; peaches ditto. Potatoes and cabbages will be a full crop, although late. New York is still getting most of her truck and fruit from the south and west. The local supply to hand is of poor quality, and the season has been exceptionally cold and late.

Your western readers have the advantage in rich soil, but they have lots to learn in its economical management compared with their New York contemporaries, who have to struggle with a soil which has been cropped for generations, steep side hills and poor, bare spots. But everything is looked after and neatly handled, and the outcome is better than the western farmer gets from his practically virgin soil.

I may take a run south through Pennsylvania and Kentucky before I return. If so, I will drop you a line and tell you how things look. THOMAS LAWSON.

RAINY-DAY REFLECTIONS.

Editor RURAL WORLD: It rains; yes, it rains gently and almost daily during the present week. To-day we had planned for a second visit to the State Fair, but a continuous and gentle rain bars us.

While I write many acres of wheat, oats, flax and timothy are yet in the shock, and are as completely saturated as they can be. Some of these are owned by our progressive farmers and owners of the farms which they operate, but who rather overpowered themselves and who could not possibly obtain the services of a threshing outfit in due season. Some are crops of tenants who have the best of a year's labor invested (his principal capital) and on which he has been depending to pay bills for groceries and clothing. In some cases these tenants have used every means at their command to save their crops in proper shape within a reasonable time. Others have apparently trusted to luck and have let golden opportunities pass by until a more convenient season. When that time comes their grain is damaged thirty to fifty per cent, and a crop which, taken care of at a seasonable time, would have made them a large profit and left them with all bills paid and money ahead and a light heart, now leaves them short of a reasonable compensation for labor performed.

We have practical examples of these two classes in our own experiences. The first has long since marketed his crops in prime condition, getting the top of the market, paid all labor bills and has a good bank account, is now preparing land for another wheat crop, while the latter class are bawling the misfortunes of the so-called poor and condemning the so-called prosperous and are calling in question the equity of God's dealings with man (if, indeed, they recognize God at all in such things), and claim to be "unlucky" themselves.

Gladstone said: "Opportunity is a horse, saddled and bridled, which once in a lifetime stops at each man's door."

Farming is truly a business, and one in which business methods are as much in demand as in the management of railroads and steamships. The farmer who imagines the next week or next month will be time enough to thresh or stack his crops which are exposed to the elements will wake up some day to find that the strenuous life is the proper caper until these crops are saved.

Unfortunately for some of us, we were not expecting twins and triplets this year. But old Missouri always pays her debts, and, having abated last year, she came along this year in the proper spirit and has not done a thing but labored and brought forth twins. With \$3,000,000 bushels of wheat and 230,000,000 bushels of corn to her credit for 1902, Missouri need offer no apology for the drought of 1901.

Those who visited the State Fair have cause to congratulate the management on its splendid success. The various barns were filled with the best types of live stock in each department. The hog and sheep barn, the best in the United States, had every pen occupied. While the exhibits were all meritorious, the writer was particularly struck with the Oxford sheep from New York state. The various breeds of beef and dairy cattle were represented by as fine specimens as one could wish to see. Draft, coach and saddle horses were to be seen, and of a very superior class. The Missouri mu's was there in all his glory, Pettis and Benton counties taking premiums on some superb specimens. The date for this fair is a little early for a true representation of the agricultural products, yet the hall was filled and more room needed.

The Art Hall was a thing of beauty, and had a throng of visitors, but the writer's tastes run more cattleward, and so we "passed by on the other side," as it were.

Some of us claim no interest in horse racing, but we notice when the band begins to play and the horses come out the grand stand is soon filled with admiring thousands, and we all have our favorites and can't help but a little hand-clapping when he wins. We took a kind of personal interest in Governor Colman's pacer, and were pleased to see him win the pacing race on Wednesday.

We were pleased to meet Secretary Ellis, Gov. N. J. Colman, Dean Waters, Alex. Maitland and other members of the State Board of Agriculture. We also grasped the hand of C. D. Lyon, who is on the farmers' institute force this year.

Pettis county farmers want to congratulate themselves for the fact that we get two institutes within our borders this year, early October, perhaps.

Our wheat crop must be short of last year, as but few have their land plowed as yet, and there is a mammoth growth of weeds to be turned under and the soil worked down before a wheat crop may be expected. Dry weather is ideal for preparing soil for wheat and for sowing the same. W. D. WADE.

Pettis County, Mo.

THOMAS F. HUNT.

In our last issue we printed some observations on the Graduate School of Agriculture, a unique institution located at Columbus, Ohio. The Graduate School owes its existence to an idea orig-

Therefore it does not follow that because you now clear \$1,000 from your farm you would clear \$10,000 by increasing the size of your farm, stock, implements, operating expenses, etc., tenfold.

We will leave the newboy and banker out of the case and compare two classes of the American farmer. The bonanza farmer of the Dakotas or California considers himself fortunate if he realizes 10 or 15 per cent on money invested after drought, insects, etc., have taken their part. Now, how does this compare with the man who made enough out of one wheat or cotton crop to pay for the land it was raised on?

We who have small farms of 100 acres or less are prone to look on the man who farms 500 acres with a feeling almost to envy, and secretly resolve that we will sell out and move to a place where land

Worth, and have to raise large crops to make the land earn its keep. This year I planted a great deal of my corn and in sorghum between the rows at "laying by." We had a drought, which cut off the corn, but the sorghum came up and stood there till the rains in July, when it took a start, and I now have one crop of hay in the stack, and will get yet another. This could be done as well in Missouri or other states as far north, for sorghum will make a good crop in sixty days from planting. Cowpeas also make an excellent crop with corn. The wheat and oat stubble could be used to even better advantage for either sorghum, kafir corn or peas. A neighbor of mine plants peonies or citrons in all missing hills and waste land; he says they are good food and hog feed. Don't forget the turnip.

Really, the by-products of the farm, or what is now considered waste products, will, at no distant day, bear the same relation to the farm as the by-products of the meat-packeries bear to those establishments, viz., a source of profit and a disregard of which would lead to bankruptcy.

I have endeavored to show how and why small farms are most profitable. I do not wish to discourage farming on a larger scale, provided you are able—and, in fact, would like to try it myself—but we must "crawl before we walk." When you are sure you are getting all the "cream" your farm is capable of giving, then it is time to "expand," but don't be content with "skim-milk" when the "cream" can be had by the use of the facilities which God created within you. H. F. GRINSTEAD.

Tarrant Co., Tex.

INDIAN CORN.

Plant-Breeding or Soil-Feeding—Which Is of the Greatest Importance?

Editor RURAL WORLD: To some extent barren stalks may be bred out of corn, and, on the other hand, barren stalks may be bred out of corn; so, also, imperfect ears, or those that fail to fill out at the tip, may be both bred-out and bred-in. It takes a judicious union of both breeding and feeding to do this.

The fact that by careful selection of seed corn the yield per acre may be largely increased should be an all-sufficient incentive to all corn-raisers to practice this wise method. While the fact that this matter of selection is not attended to as it should be, must be our excuse for intruding ourselves and our individual ideas upon a patient and long-suffering public at this writing.

It has been said that "in a multiplicity of counsel there is safety"; but, from the very opposite and conflicting opinions we see promulgated through the agricultural press, Experiment Station bulletins, etc., we are constrained to believe that the same "multiplicity of counsel" simply tends to make confusion worse confounded and mystifies and boggles the minds of those who are anxious to learn.

In seed "breeding," the breeder has a specific object in view; so, also, in "feeding," the feeder must have a certain specific object in view. Without this, neither the breeder nor the feeder could work intelligently or profitably.

Earliness, increased size where the plant habitually grows too small, weak or spindling; decreased size, where it, on the other hand, grows too large or too tall; increased productiveness, increased productiveness, low-growing, sticky stalks, but with a deep-root system, are the ends toward which our breeders are bending all their energies and exercising all their ingenuity to attain. Some desire a large cob, some a small cob; some a red cob, some a white; some want a stalk with a single large ear, some a stalk with two medium ears, and others a stalk with a dozen ears. Each have their ideals, and so it is with each individual farmer, as well as breeder, if they ever take time to consider the matter of selection at all, which, unfortunately, many of them do not.

From extended experience and close observation, we are inclined to believe that barren stalks are, more often than any other cause, brought about by a deficiency of plant food in the soil. A barren stalk is usually an over-grown stalk. The available supply of plant food has in this case exhausted itself in making stalk; hence, the supply being exhausted, there is nothing left where-with to make the ear. Where fertility is abundant, and this same fertility present in due proportion, there will be, of course, if any barren stalks; this, of course, where due regard has been paid to a careful selection of seed.

"Imperfect" ears, or those which have failed to fill out at the tip, are sometimes due to imperfect pollination, but more often to a lack of perfectly formed ovules, this lack of perfectly formed ovules being sometimes due to defective nutrition, or, in other words, to an insufficient supply of plant food and at other times to an insufficiency of moisture at the right time for their formation, while in still other instances it is an hereditary trait that has to be bred out or culled out by years of continuous careful selection.

Where these imperfect ears are the result of imperfect pollination, it may be remedied by the planting of another prepotent, but later, variety with it, or a later planting of the same variety, the object being to prolong the period of pollination being to the city limits of Fort

NEWS AND COMMENT.

The corn crop is going to be a wonder in quality and quantity; we are getting our ciphers ready.

This country furnishes England with one-third of her agricultural imports. France is our chief competitor in this field.

An apple-growers' congress will be held in St. Louis Nov. 18-19, in which orchardists of the Mississippi valley will be particularly interested.

An agricultural college is to be established in Jamaica. Perhaps that little island will yet become famous for products other than ginger, rum and molasses.

Ginseng is reported a failure by Oklahoma Experiment Station. This crop requires a vast deal of shade, moisture, patience and faith. As a lead pencil crop nothing ever equaled it.

In the naval manoeuvres off the New England coast the "enemy" lost the day. We shudder to think what might happen had the white squadron effected a landing. It would have been a bad precedent.

The Missouri State Fair at Sedalia last week was a grand success, both in point of attendance, which broke the record, and in number and character of exhibits. Missouri can "show" as well as "be shown."

A variety of sorghum named "seed ribbon cane" is now interesting sorghum syrup makers. It is named "seed ribbon cane" because it yields syrup like tropical sugar cane syrup, and also produces seed, as sorghum cane does.

The Missouri Veterinary Association held its eleventh annual meeting in St. Louis last week. Veterinary surgeons are a good deal like other sorts of doctors. Some are adepts with the scalpel and others are skilled in the use of language. All of them are convinced that it takes more old-fashioned common sense and a little more skill to be a really good "vet" than it does to become a fairly successful "man doctor."

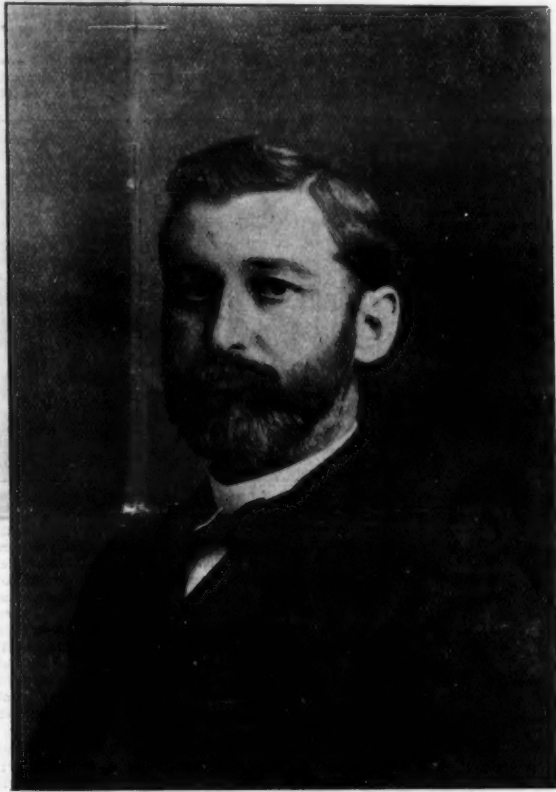
We are indebted to Prof. M. G. Kern for the photograph and sketch of the cypress group in Tower Grove Park, St. Louis, shown this week on the Horticultural page. Prof. Kern is one of our foremost landscape gardeners, combining a love for the science of botany with the enthusiasm of the artist for his profession. He is the designer of the beautiful landscape effects in Lafayette and many other St. Louis parks.

President Schwab of the steel trust has gone to Europe for his health. What is a million a year to a man with a bankrupt nervous system. It begins to look as though the cure for Americanitis is in sight. When J. P. Morgan breaks down it may help to make many of us content with a moderate degree of success. This thing of being so successful that the victim can't sleep 'nights for thinking of it, is not all the lesser Napoleons of finance think it is.

The coal strike continues with no prospect of a settlement. This is bad for the operators, worse for the miner, and worst for the consumer. Various substitutes are being tried; shellbark hickory isn't so bad, and the crop of corn cobs this year ought to cut some figure. Not so many years ago western farmers burned corn, not that they were short of fuel, but because they were long on corn. With the big 1902 crop and the prospect of good prices, the corn growing farmer will be "right in it," but he won't have corn to burn.

The destruction of the sheep by drought in Australia is sad, even if it does help the American grower. In May, 1890, a load of starving sheep left one station in search of feed, railroads making special rates for starving stock. Ground corn cobs, mixed with molasses, sell at 20 shillings (\$5) per ton. In Queensland, colonists of 50 years' experience have never known such a condition. The reduction of numbers, prevention of natural increase and diminution of wool product will cause a check to the sheep industry requiring years for recovery.

The Missouri State Fair for 1902 has passed into history. Notwithstanding there were heavy rains on three days of the week, which kept thousands away, the fair proved to be a financial success, as well as a success in all other respects. In the display of Shorthorn, Hereford and Friesian cattle, good judges who have attended many state fairs, they have never seen it equaled, while in Berkshire, Poland-China, Chester White and Jersey Red hogs, the exhibit was very fine, and the same can be said of the different breeds of sheep, some of the mutton breeds being almost as large as well-grown yearling steers. In poultry, there was a wonderful exhibit, some of the finest specimens in America said to be present. The display of agricultural products was simply remarkable. A number of counties exhibited in competition, and we heard many of the residents say they had before had no true idea of the variety and excellence of products of their own counties. The fruit drew admiring remarks from all who witnessed it. Indeed, in all the departments were most admirable displays. The great drawback was the lack of room. The need of more buildings was apparent to every one if any adequate exposition of the products of this great state is to be made.



THOMAS F. HUNT.
Dean of the College of Agriculture and Professor of Agriculture, Ohio State University.

Inating in the fertile brain of the dean of the Ohio College of Agriculture, Professor Thomas F. Hunt, whose portrait adorns this page.

Standing upon the threshold of the edifice which he and his co-workers have erected, it is impossible to foresee the usefulness to the world of agriculture which this latest addition to the cause of the new science may develop.

To the Edisons and Marconis of a material age, public approval erects ample tablets in the halls of fame. How much more should we honor any man out of whose brain springs a new idea—a new idea—a new thought in the realm of intellectual progress? We follow in the blazed paths of all the great intellectual achievements, and so readily do we absorb and appropriate the ideas and teachings of the great masters that we soon believe they are ours, indeed, and the pioneer who braves the wilderness of conservatism and orthodoxy is remembered as but a name.

Associated with the establishment of this post-graduate course in agriculture is Dr. A. C. True, director of the office of Experiment Stations, whose portrait we will present to our readers in our next issue.

FOR SMALLER FARMS.

Editor RURAL WORLD: Not long since I read an article in which the editor of a poultry journal sought to give a subscriber, who evidently had a case of the "hen fever," some timely advice supplemented by the admonition to give up the case of the newboy who makes 60 per cent on capital invested, while the banker is happy if he is sure of the modest income of 10 per cent. Still we do not find bankers investing their capital in newspapers, nor does it appear that the newboy is becoming plutocratic.

Here is where the above comparison comes in: A great many find that they can make an enormous profit off a few hens, 500 tomato plants or other crops of like proportion, and conclude at once that the same per cent profit could be realized by increasing the business "ad infinitum." Such is not the case any more with the farmer, stock-raiser or trucker than with the newboy and banker before mentioned. We who have tried it know that in increasing the capital invested in farms and equipments, the cost of operating increases in a much greater ratio than does the income.

The Dairy

A meeting of the Executive Committee of the Missouri State Dairyman's Association was held Saturday, August 23, at Sedalia, to fix upon a time and place for holding the thirteenth annual meeting of the association. Our next issue will contain announcements of this year's meeting.

THE DEAN OF AMERICAN DAIRYING.

We present this week three illustrations from Gov. Hoard's place, near Fort Atkinson, Wis. These pictures were taken by Dr. W. J. Chamberlain, of Cleveland, O., and we have reproduced them here for the benefit of our readers who know and appreciate Gov. Hoard's position in the realm of dairying.

Gov. Hoard has done more than any other man to bring dairy interests to the front. He is responsible for the "Wisconsin Idea," which means that where there was once a state devoted to grain farming and selling, with a gradually impoverished soil, and where mortgages were plentiful than manure, there is now a state where butter and cheese factories dot the landscape, with dairy herds of special-purpose cattle in between. Mortgages have disappeared, and thrift and prosperity have taken their place. It is not too much to say that the influence of Gov. Hoard as Governor of the State of Wisconsin, and as editor of "Hoard's Dairyman," the most virile and practical dairy paper published, has been the inspiration and motive power for this happy change.

A millionaire manufacturer of St. Louis said to the writer only a few days ago: "Wherever our goods are sold in dairy communities payments are made promptly, often in advance. I have noticed that in such communities the people were prosperous and houses and properties neat and well kept."

Missouri may profit by the history made by the farmers of Wisconsin, Iowa and Illinois. These new dairymen ought to make a record, as they will not have so much that isn't so to unlearn.

WHAT ARE YOU THERE FOR?

The "New Editor," having had some little experience in the matters referred to, desires to have a few heart-to-heart talks with those members of his flock who own cows, whether they be "professional" dairymen or keep but a small bunch of general-purpose cattle from which a small amount of milk, cream or butter is marketed. The writer knows personally many dairymen who know they are making a profit in the business, but there are many others who seem to be going it blind; they are either careless or indolent, or feel in a vague way that they are not making it pay and do not wish to know the whole truth.

If this be true, the question, "What are you in the dairy business for?" is a pertinent one. It surely is not impertinent, as the inquiry is made with the best of faith and from a sincere wish to see every dairymen prosperous. You are not in business for your health—entirely—and the answer is, "The dairyman is in business to make money." Are you making a profit? Do you keep a record, no matter how simple, of expenditures and receipts, so that you know what your product costs? In estimating the cost of production, do you include the value of feed you raise? Do you include the worth of the labor of your own hands? Do you properly appreciate the manual value of your feed? Are you handling your milk according to up-to-date methods so as to get the highest price? Are you handling your cows in the most intelligent way? Do you still keep old Brindle just because you have had her so long or young Lilly because she is so pretty, although neither of them give more than a gallon of milk a day? Do you get all that's coming to you, or are there other markets, perhaps more remunerative? Will you not ask yourself all these questions and ponder over their significance and then answer them to yourself?

AN EXPERT OPINION ON ALFALFA.

Editor RURAL WORLD: I read with much interest your article on "Alfalfa as an Exclusive Dairy Ration" in your issue of August 13. Having spent some ten years in a region where alfalfa hay is the standard feed, I wish to add to what you say that I know of many horses, cattle, sheep and hogs that live exclusively on alfalfa. While I do not consider this the very best method of feeding, there are circumstances under which it is the most desirable. My experience in feeding dairy cows indicates that it is entirely safe to give them much more protein than we know their systems demand, but it is not safe to give them much less. In the south and west, where it is somewhat difficult to grow a balanced ration on account of the great abundance of nitrogenous feeding stuffs, it is not desirable to feed as small an amount of protein as is called for in the feeding standards.

I have noticed that in feeding horses a ration that is decidedly rich in protein their kidneys very frequently become deranged, and in the alfalfa ration a good many horses die annually from this cause. I have never known of any trouble from too much alfalfa. I know of many herds of dairy cows that do fairly well at the pail on exclusive protein feeding, but where corn or barley or wheat are available at a reasonable price it is better to add four to six

General Debility

Day in and out there is that feeling of weakness that makes a burden of itself. Food does not strengthen. Sleep does not refresh. It is hard to do, hard to bear, what should be easy—vitality is the ebb, and the whole system suffers. For this condition take

Hood's Sarsaparilla

It vitalizes the blood, gives vigor and tone to all the organs and functions, and is positively unequalled for all run-down or debilitated conditions.

Hood's PILLS cure Constipation. 25 cents.

pounds of such grain to the ration of the cow that is giving, say three to three and one-half gallons of milk a day.

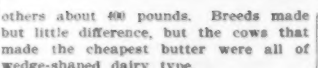
W. J. SPILLMAN.

Agrostologist, United States Department of Agriculture, Washington, D. C.

NECESSITIES IN DAIRYING.

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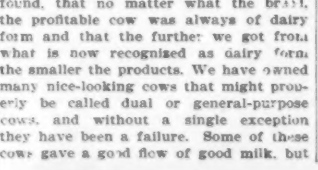
Editor RURAL WORLD: For one year the Minnesota Experiment Station weighed all the food consumed by the station herd, and the milk was weighed and tested for butter fat. In his report, Prof. Haacker says: It was found that some cows produced butter at a cost of 12 cents per pound, while for others the cost ran as high as 17 cents per pound. Some of the cows produced but little over 200 pounds of butter in a year, and



View of dairy barns on Gov. Hoard's farm, Ft. Atkinson, Wis.

others about 400 pounds. Breeds made but little difference, but the cows that made the cheapest butter were all of wedge-shaped dairy type.

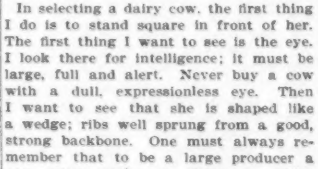
It seems to me such results open the door for great improvements that can be made along dairy lines by farmers who do not care to breed special dairy breeds. In our experience of twenty years, we have found just what Prof. Haacker has found, that no matter what the breed, the profitable cow was always of dairy form and that the further we got from what is now recognized as dairy form, the smaller the products. We have owned many nice-looking cows that might properly be called dual or general-purpose cows, and without a single exception they have been a failure. Some of these cows gave a good flow of good milk, but



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their milking period was always too short to have any profit at the end of the year.

It is a hard matter to describe dairy form to those who have given the matter no particular thought, but some of the more prominent points can be grasped, so as to give one a starting point. In selecting a dairy cow, the first thing I do is to stand square in front of her. The first thing I want to see is the eye. I look there for intelligence; it must be large, full and alert. Never buy a cow with a dull, expressionless eye. Then I want to see that she is shaped like a wedge; ribs well sprung from a good, strong backbone. One must always remember that to be a large producer a cow must work over large quantities



View of pasture on Gov. Hoard's farm, Ft. Atkinson, Wis.

of various foods, and among them a test of the food value of butter and oleomargarine. It finds butter the much more desirable food in that not only is a larger per cent of itself digested than of oleomargarine, but when butter is used, a larger per cent of the foods eaten at the same meal is digested. A discussion of the results presented in the bulletin shows that in the ration with butter, the crude fat was 8.54 per cent digestible and 92.06 per cent of the total caloric value of the ration was available to the body. In previous experiments it was found that 88.8 per cent of the energy measured as calories in the bread, milk and beans was digested and available to the body. In the same ration in which oleomargarine took the place of butter, crude fat was 94.2 per cent digestible and

of roughness, and she must have room in which to do the work, and that room is her stomach. Our best cows have always been those with plenty of room between the ribs. This one point is responsible for the ungainly looks that always go with and are a part of the paying dairy cow. She must have room to work over and digest large quantities of roughage, and to have the room she will always be what we call a paunchy cow.

About twenty years ago, before there was any attention given to dairy form, my mother had a heifer that to-day would be rated as a model in dairy form. She did not like the heifer because she was so ugly. She had been trying to sell her for quite a while, but no one seemed to want her. One day she said to me, "Can't you like that heifer?" I said, "I don't like to spoil the looks of our herd with such a looking thing as she is." She was soon to be fresh, and my mother said, "Feed her off for beef after she has her calf." "Well," says I, "what's your lowest price?" "Give me four cords of stove wood and she's yours." This was as near nothing as I could ask, so I drove her home. On the way I had to cross a stream on a bridge.

After I had started, mother called after me and said: "Better feed the stream or Jersey will stick on the bridge!" "All right," says I, "if she sticks on the bridge, she sticks to me," and I trudged homeward the possessor of the most homely animal I ever owned, thinking the while how soon a fool and his word had parted.

Perhaps a week later I bought a cow—everybody's kind of a cow, large, smooth and round—recommended to be a cow with few equals and a superior. She and my homely heifer came fresh about

the same time, and stood side by side in a double stall. My nice cow, for which I had paid \$46, gave a little more milk when fresh, but in two months the heifer was leading her. After giving milk for six months the big, nice cow suspended business entirely, but the heifer kept on giving a good mess of milk for ten months after the first year. They again came fresh about the same time (October 1). This time the heifer was up to the big cow in yield, in spite of the fact that she favored the large cow. About February 1 following, we bought our first Babcock tester, and began to weigh and test each cow's milk, and found, to our surprise, that our paunchy, out-hammed heavy heifer was making butter for us at a cost of eleven cents per pound, while the pride of the herd (October 1). This time the heifer was up to the big cow in yield, in spite of the fact that she favored the large cow. 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Horticulture

GARDEN SONG.

By Edward Salisbury Field.

The passion vine clings to the wall,
But the wall is cold; it does not care
For the passion vine.
And the weeping willow loves the flare
Of the sunflower, standing straight and
tall
Beside the wall.
But the sunflower's passion for the sun
Is known to everyone.

—From Out West.

HORTICULTURAL TALK.

FRUIT EXHIBITS.—The time for fair and fruit exhibits is now close at hand, and all interested in fruits or other farm products should make an attempt to farm up as many of these as possible. The observing amateur is especially benefited. He gets acquainted with the different varieties, both by reading the labels and examining the specimens, and by quizzing the exhibitor, whom he will, as a rule, find very willing to answer questions. He will find there specimens of the same varieties he grows, and should be able to find them better than any he has seen before he will go to the trouble to investigate and find out the secret of growing such fruit. He may find a new variety that he has heard of and thought of planting, and seeing the fruit will be somewhat of a guide. If well impressed with the order at once. If not pleased with it he may save several dollars by not ordering, which he might otherwise have done.

Good local varieties are sometimes exhibited that would not be disseminated in any other way. When you go to these exhibitions don't be selfish and go there only for what you can learn from the labor of others, but take with you something that may be instructive and of interest to others.

You may, by getting up a collection for exhibition, take premiums enough to pay your expenses. Be sure and take such varieties as you think are not generally known, even if they are not desirable, for it may benefit some one else to see them.

In selecting take specimens that are typical of the variety in shape, size and color. It is a common mistake to select monstrousities, regardless of other important points. Besides what we learn at the fruit shows, it gives us a much-needed rest, and we go back to our work with more ambition and interest than ever.

HANDLING PEARS.—Now is about the time that most varieties of pears should be gathered and sent to market. Bartlett, Howell, Seckel, Garber, Le Conte, White Doyenne, Louise Bonn and several others are ready to come now. The time to pick pears is when they come off easily without breaking the stem. Few pears are as good if allowed to hang on the trees until fully ripe, as they are when picked early and allowed to ripen in a cool, dark cellar. This seems strange, as it is not true of any other fruit to my knowledge. Many growers do not realize the importance of gathering pears intended for market with the stems on.

Not only do they present a much better appearance with the stems on, but where they are broken it often leaves a short, stiff stem which will, when the pears are being poured about to penetrate a great many otherwise sound pears, causing them to rot in a short time. Another result of careless picking is that the stems are sometimes broken off so short that the fruit is injured either by bruising where the stem connects, or by a piece of the pear being pulled off with it, which will happen sometimes with long-petioled pears like Bartlett. Any such injury will result in the fruit beginning to decay before it ripens. Pears, like all other fruit, should be well graded, carefully and honestly packed.

VEGETABLE NOTES.—The market for all kinds of vegetables is picking up wonderfully. All good products of this class are in demand and bring satisfactory prices, with the exception of sweet potatoes. These are cheap now, but will no doubt come out all right in the end, as the crop in the main potato section is reported very short. Don't neglect to have some nice lettuce for fall use. As a late sweet corn Stowell's Evergreen is hard to beat where a large ear is no objection. Save your small potatoes for winter use. By storing them on shelves in a cool, dry place where there is plenty of light they will give you the earliest potatoes.

We had a much-needed rain on the 18th, which refreshed things nicely and did much good to growing crops. It softened the stubble fields, which are now being plowed at a lively rate.

EDWIN H. RIGHEL.
North Alton, Ill., Aug. 19, 1902.THE AMERICAN CYPRESS ON UP-
LAND.

The accompanying illustration represents a sylvan spot in Tower Grove Park. The graceful trees composing the same are the native Cypress (Taxodium distichum), well known to the lumber trade of the country. Though indigenous to the swamps and low lands of the lower Mississippi, in which the tree assumes gigantic proportions, it accommodates itself to the ordinary upland soil of this region, forming a straight trunk with graceful foliage of a light tint.

The many groups of this species lending so peculiar a charm to the sylvan scenery of Tower Grove Park, were planted as small saplings in the years of 1862 to 1870—the time of the first attempt of improvement of the tract donated by the late Henry Shaw. Their rapid growth, attaining now a height of thirty to fifty feet, in ordinary prairie soil, can readily be realized by a passing glance over the picture here presented, and an approximately correct idea of the value of this tree as a partial substitute for the fast-vanishing forest wealth of the land may be formed by the tiller of the soil along the Lower Missouri and Mississippi rivers.

What a wealth of timber might be produced in these regions on lands lying subject to overflow and unfit for legitimate agricultural uses! The readiness with which the American Cypress adapts itself to upland soil forms the basis of an interesting consideration of the question of future supply of timber, a subject called by scientists, "forestry," the true solution of which is universally commended, next to the grace of Providence, to the national government. As charity should always begin at home, so should

Intelligent enterprise amongst the agricultural portion of the nation take hold on the solution of their national problem without waiting for the consent of instruction of so-called experts and professors in the easy chair of American Forestry! No spraying machine needed in this venture. The tree grows readily from the seed, and requires no care.

St. Louis. M. G. KERN.

MEETING OF APPLE GROWERS.

A meeting of apple-growers and those interested in apple culture was held at the Southern Hotel, St. Louis, on the 19th inst., to arrange for a congress of apple-growers to be held in that city Nov. 18 and 19. There was a large attendance from many of the states, of men representing the apple-growing interest. Mr. H. C. Cupp of Fall River, Ill., president of the Mississippi Valley Apple-Growers' Association, was elected temporary chairman of the national congress, and C. B. C. Wilson of Hannibal, Mo., secretary. An executive committee of fifteen was named, as follows: J. D. Snodgrass, Jerseyville, Ill.; P. A. Rodgers of Arkansas; G. T. Tippin of Springfield, Mo.; J. T. Stinson, Mountain Grove, Mo.; W. H. Barnes, Topeka, Kas.; A. V. Schenck, Kilmory, Ill.; Guy D. Stewart, Baltimore; George R. Kell, Fruitdale, Ala.; W. Green, Davenport, Iowa; C. H. Williamson, Quincy, Ill.; A. P. H. Schenck, Arkansas; W. R. Wilkinson, St. Louis; H. C. Cupp, T. C. Wilson and F. W. Taylor.

LATE SUMMER STRAWBERRY WORK.

Editor RURAL WORLD: Stir the soil by shallow culture as soon after each packing as it is in proper condition. This serves a twofold purpose; it kills all grass and weeds easily, and long before they attain dangerous proportions. It also conserves moisture by breaking the crust and destroying the pores or capillaries, by means of which the water in the soil passes upward to the surface to be lost by evaporation. We plow the middle of the rows with a small-tooth cultivator and stir around and between the plants with light hand-hoes, taking pains not to go too deep, especially near the plants—an inch deep near the plants, increasing gradually to about two inches farther off is about right. Where there is not much grass to cut up, forked potato hoes answer the purpose perfectly.

The runners should also have careful attention at this season. If the soil is rich and the season wet, they crawl about almost like snakes. If the stool, or hill, system—the best with most varieties—is to be followed, the runners must be clipped off as fast as they appear. If allowed to grow and dangle on the parent plant it is weakened, and the coming crop lessened thereby. We have never seen but one runner-cutting device that worked well—a boy with a knife and an eye on the boy. It is exceedingly fast and simple work if done in time, and costs but little. Runner-cutting machines do not cut the runners close enough to the old plant. It must always be cut between the old plant and the first joint, else a plant will form at the joint and dangle there, a most harmful parasite, till winter kills it.

Look well after the borders of your strawberry fields and the ditch banks. Dig up or mow down all weeds before they get large enough to "draw" the neighboring plants. The drier the season, the worse the "drawing." Trees also do much harm this way by sending their roots in the strawberry fields, robbing them of moisture and nourishment. It is a good plan to cut these piling roots. Do it by means of a sharp spade driven down close around the outer border of the field next to the trees, using a mattock or grubbing hoe when a root is found too large for the spade to cut.

O. W. BLACKNALL.
Vice-Pres. N. C. Hort. Society.
Kittrell, N. C.

CARPET WEED.

A correspondent sent a specimen of plant to this office, which was forwarded to Prof. Irish, the horticultural assistant at the Missouri Botanical Garden. His reply is appended hereto:

Missouri Botanical Garden,
St. Louis, Mo., Aug. 19, 1902.

Editor RURAL WORLD: The specimen received was so badly crushed it was very difficult to determine, but it appears to be what is commonly known as "carpet weed" or "Indian chick weed" (*Mollugo verticillata*). It is a much-branched, prostrate annual, each plant forming a patch a foot or more in diameter. It is very common in cultivated places, especially where the soil is a sandy loam, and along the bare ground of paths. It has been introduced from the warmer parts of America, and is now common from Canada to Florida and across the continent. I do not know that it has any agricultural value, and after considerable search I find no record other than of technical botanical interest. If you eat it, that fact does not appear to have been published.

H. C. IRISH.

SOUTH MISSOURI PEACHES.

(Concluded from last week.)

The counties of Howell, Oregon, Laclede, Greene, Polk and Christian comprise the South Missouri peach country. It is true that there are orchards in other parts of the state, and of considerable extent, but it is in the counties named that the production reaches such proportions as to make it compare with the industries at the great manufacturing centers. No other crop produced in the agricultural portion of the State of Missouri, or, in fact, any place in the United States, compares with the peach orchards of South Missouri. There is the St. Elmo orchard, with its 5,000 acres, only a portion of which has been utilized thus far in peach culture. From the return for the present season will not be less than \$100,000, as the estimates of the crop now in process of being gathered run from a minimum of 250 carloads to a maximum estimate of 400 carloads. The returns are not all to the big orchards, either. O. L. Meek bought a small farm near Koshkonong a few years ago, and paid but \$500 for it. This year he will make a net profit from his orchard of not less than \$2,000. W. C. Faynter, who was formerly manager of the big farm at St. Elmo, bought a small farm near the same place, in 1896, for \$300. He sold it in 1900 for \$500, and the same season its new owner made a net profit off his peaches of \$484. J. M. Swan had a farm of forty acres near Koshkonong, and all winter advertised it for sale at \$1,000. He found no purchaser, and this year (as he has 1,800 peach trees bearing fruit) he had no difficulty in disposing of his crop on the trees for \$1,200.

These statements are based on this year's and last year's values, but the

people of the country are rapidly appreciating the true value of their holdings, and are slower to part with their property except at a good price, although there are still hundreds of acres of land that can be acquired at a surprisingly low figure. No man in South Missouri has done more than E. C. Markham to bring the people of the section to a proper appreciation of the value of their holdings. Mr. Markham has been a resident of West Plains for a number of years, but received much of his business education in the business office of one of the big Chicago dailies. While he has waxed rich himself, he has established a reputation for enterprise and fairness, and has done much to encourage the people here in the improvement of their land and in securing proper valuations. The peach country proper extends back on both sides of the Frisco railroad for a distance of from three to five miles. It begins at one of the highest points in the state on the top of the crest of the Ozarks at Cedar Gap, and is as far south as Thayer. In that strip of country along the road are to be found the shipping points to Hardy, Cedar Gap, Seymour, Mountain



A GROUP OF CYPRESS.

Grove, Burnham, Pomona, Olden, West Plains, Brandsville, Koshkonong and St. Elmo.

This year's crop is an enormous one, but it is confined to the district described, which lies south of this place. This year nature seems to have established a "dead line," which passes through this place. North of West Plains the crop was almost an absolute failure. Last year there went from the Olden farm enough peaches to secure a net profit to the company operating it of \$20,000. This year there will not be a carload lot. But Mr. Evans, who manages the farm, is by no means discouraged. He believes, as do others who are situated like him, that it is a good thing for his orchard, and the rest of the season will benefit his trees and bring a yield far in excess of anything in past years when another season comes around. The frost of last February is accountable for the failure of the crop north of this place. That the trees south of here did not suffer from the same cause is attributed to the difference of elevation. The elevation descends gradually as you pass south from Cedar Gap. What the people north of here lose this year, they were more than compensated for last year. To the south the crop of peaches is better than ever before in the history of the orchards. Most of the orchards were planted three or four years ago, and they are just now rewarding their owners for the care given them by bearing the high-priced fruit. Most of the trees begin to bear a good crop after three years, and a splendid crop on the fourth and fifth year, while crop on the fourth and fifth year, while small portions of the orchards which are bearing heavily are from seven to eight years old.

To the farmer or fruit-grower who comes to this country from the apple country of New York, or the level prairie country of Illinois, Indiana or Iowa, the outlook is discouraging. Farmers from these states who look upon the rolling uplands of the Ozarks and see them covered with rocks which vary in size from the smaller rocks about as large as an egg to the boulders which are twice the size of your hat throw up their hands in despair. To imagine putting a plow into that rough-looking land or ever producing anything on it seems, at first sight, to be preposterous. Yet but little of the land is cleared of this rock. The finest strawberries raised in the United States grow in these rocks, and command the highest prices. The orchards, too, are on this sort of land. The average native Missourian does not marvel at this. He knows what the land will do, and is satisfied to carry his inquiries no further than to learn what results can be secured. He says, when asked, that the rocks hold the moisture in the ground, and the dry spells do not affect the crop. He knows no more than this.

Out of Illinois to West Plains has come one of the foremost educators of that state, a man who had a reputation as wide as the borders of that state twenty years ago, and who in the past two decades has increased his reputation through his association with schools and colleges there. He is Prof. W. H. Wil-

son. He has become the head of a college here, and believes the country has great possibilities. He was asked for his opinion of the rock land and why it is so rich and so profitable, although so uninviting in appearance. He advanced a novel theory. When he first came here the people told him that the surface covering of their farms was flint. He was doubtful, and one day when he had a little leisure he examined a large rock picked up in one of the best orchards in this section. He broke it with another and harder rock, and found that, unlike flint, it broke into small pieces of rhomboidal form and not along strata. But little more investigation was necessary for him to establish the formation as felspar, and exploded the theories of the natives that the rock was flint, because at night it gave back sparks to the steel of their buggy tires or the clatter of their shoe horses. The felspar, with its aluminum silicate, with potassium and sodium and calcium, is a natural fertilizer. The action of the frost and of the rain causes it to gradually disintegrate. Prof. Williamson says it not only serves the purpose of retaining the moisture in the ground and preventing the hard rains from washing the soil away, but it steadily enriches the land as it disintegrates. At least one of the fruit men has made a modest fortune in clearing his land in part of the rock, which covered it, and selling it to the railroad for ballast, but he has not stripped it entirely, nor would he do so.

Just now the peach harvest is on. As your train goes whirling past every station from West Plains to the southward it passes miles upon miles of orchard, where thousands of men, women and children are engaged in gathering and packing the peaches. On the smaller orchards temporary packing houses are constructed in the cleared places in the orchards themselves, where a spread of canvases protects the packers as they carefully arrange the fruit in the crates.

label placed upon it, containing the bee-keeper's name and the exact weight with a fair deduction for the weight of the section plainly stamped upon it. For further information or land Pamphlets, Folders, Maps, etc., address any agent of the company, or H. C. TOWNSEND, General Passenger and Ticket Agent, St. Louis, Mo.

When one thinks that any bee that walks out of its cradle, pale, perhaps, but perfect, knows at once all that is to be known of the life and duties of a bee, complicated as they are, and comprehending the knowledge of an architect, a wax-modeler, a nurse, a lady's maid, a housekeeper, a tourist agency and a field marshal, and then compares that vast knowledge with the human baby, who is looked upon as a genius if it gurgles "Goo-goo" and tries to guide its mother's eyes out with its fingers, one realizes that the boasted superiority of the human brain depends largely on human vanity.

The Apiary

BEE-KEEPING FOR FARMERS.

We have not been an advocate of any one going into bee-keeping on a large scale until it had first been demonstrated that the venture had been warranted. Better begin with a colony or two and grow up with the business. Success is usually attained in this manner, and if your locality is good and you are especially adapted to the business it is an easy matter to grow, and better than to offer later a large lot of second-hand appliances for sale cheap. We have always been an earnest advocate of bee-keeping as one of the industries of the farm. Every farmer should produce what honey he can for his own use if not for market. Honey is recognized as a healthy article of food, can be produced cheaply by the average farmer, and we know of no class who are better entitled to this delicious article on the table than the hard-working farmer, and he has only to secure the service of the little busy bee to gather and store it for him. Please do not conclude when you have secured the colony and placed it in some convenient position on the farm your labor is over until the crop is to be gathered. Not so. Bees need possibly less care than most any industry, but what they need must be given at the right time and in the right manner. Carefulness, gentleness and observation are some of the most essential elements of success in this branch of our industry, and these, put into practice, are pretty sure to bring success.—Cor. Epitomist.

MARKETING HONEY.

In these days of adulterated food products consumers look with suspicion upon any article which cannot show proofs of genuineness. Among the other products which have been manipulated by the makers of these impure and imitation foods is honey. But their activities have been confined to the strained article, and notwithstanding the sensational statements in the press, they have never been able to imitate comb honey. Cases where it has been charged that spurious comb honey has been on sale have been investigated and found without foundation in fact. With this in view, it will be seen that it is the best policy to sell it in the comb. The sections should be of sufficient size to contain a full pound, as there is much complaint among consumers that much of the product sold is underweight. In this, as in all other dealings with the public, honesty will be found to be the best policy. The best market is the one that is nearest to the dealer and among people who know him. Each section should be weighed and a

MANAGING SWARMS.

If increase in colonies is what you want you need not expect any amount of surplus honey. I only use the first swarm for the making of honey and the parent colony for making the increase by dividing into two to four nuclei. First I would let the old colony swarm once and have them from the tree or bush they decide to settle on and would be careful not to give them any honey until late in evening if it be a time when no honey is coming in, as it would cause serious robbing and perhaps the loss of the swarm.

If honey is coming in you need not give much honey, as a swarm leaving the parent hive will carry enough honey with them to last until the next day, when they can gather more if the weather is good. But if not they will need feeding. I am not in favor of giving swarms until the honey flow commences, which should be now. Then, in six to seven days after the first swarm comes out go to the old colony with as many empty hives containing comb as you desire to make.

Each nucleus should have two good frames of brood and bees with one or more good queen cells on. Give each nucleus honey enough to last until they get strong enough to gather their own living. If this is done in the first part of the swarming season all the nuclei so made should be strong and in good shape to go into winter quarters, if they have had honey to keep them rearing brood.

The first swarm should be the one to make your surplus honey and should have supers, or a set of upper story frames, put on just as soon as there is a little honey in brood chamber, as they will be crowded very quickly before you have been giving them comb and full sheets of foundation as they should have when hived.

DOUBLE BAND OF REWARD

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All that the best agricultural authorities have found out about fertilization is told in our books. We mail them free to farmers.

GERMAN KALI WORKS
53 Nassau St., New York

At the big farms, like the St. Elmo, the Hitt and Culver farms, more substantial packing sheds of wood have been erected, where 300 or more packers can work at the same time. On the St. Elmo farm there are three of these great packing sheds, with a capacity sufficient for packing fourteen carloads of the fruit in ten hours, not less than 2,500 people being employed in the sheds and in the orchards in the work. Indeed, it is even estimated that in a few days, when the Elbertas ripen fast, there will be days when trains of 40 refrigerator cars will be loaded in a single day at one farm.

This year's conditions are ideal for big returns from the orchards. The market is right, the crop is right, transportation facilities are right, and the fruit-growers of Koshkonong and St. Elmo will prosper as never before. The Missouri crop occupies a season of its own, naturally, and does not come into competition with any other crop. The Elbertas of Georgia and the southern states have just been harvested and the supply exhausted. The peaches in the northern states will not be ready for market for several weeks to come. The Missouri peaches will supply the demand between these seasons, and are being shipped to-day, not only to New York city, Boston, Philadelphia, Chicago and St. Louis, but they are going by the carload into the southern cities of Atlanta, New Orleans and Mobile, to the latter place in part for export, and to the northern cities of St. Paul, Minneapolis and Milwaukee.

The Elberta has become the standard for the Missouri growers. Almost all of the trees of the St. Elmo and Koshkonong farms are of this variety. The older orchards, like that of Olden, have experimented with all varieties and established the desirability of the Elberta for this country. The new orchards to the south have profited by the experience of the older ones, and in a few years there will be practically nothing but Elbertas in South Missouri. The Elberta has become to the peach-grower what the Ben Davis is to the apple-grower.

A drive of several miles through the extensive orchards of this section, the witnessing of the busy scenes about the great packing sheds and the rush and roar of the long fruit trains which speed on express schedule to the northward, as you sit in the train on some lonely side-track, convince you of the importance of the peach-growing industry in South Missouri. Then people tell you that the industry is still in its infancy, and men of money from half a dozen agricultural and fruit states are here looking over the ground and making plans to enter the field. It seems natural to ask, with vague speculation, "What of the future of Southwest Missouri?"—J. H. A. in Globe-Democrat.

IMPORTED "MALAKOFF" WINTER SEED WHEAT

50 Bu. Per Acre; Product of our own crop; grown from seed imported by us last year, from near Black Sea in Crimea, Russia. Price \$2 per bu. here, bags free. All other leading sorts of seed wheat, both hard and soft, \$1 per bu. and up. Write for free catalog, samples and descriptions. Address J. H. RATHKIN & SONS, Shenandoah, Ia.

...WHAT PAYS YOU BETTER TO RAISE...
THAN OUR

BEARDED FIFE WINTER WHEAT

which produces 55 bushels per acre. Such was its yield at the Iowa Experiment Station and its average yield is 40 bushels per acre here in the cold Northwest. It is the only Winter Wheat that withstands the severities of our winters here in Minnesota and can therefore be depended on for a crop everywhere. It is hardy, immensely productive, stiff strawed and of the best milling quality.

At a yield of 40 to 50 bushels per acre it is a profitable crop to grow even at 50c per bu. Price, Bu., \$1.30; 2 1/2 bu., \$3.10; 5 bu., \$6.00; 10 bu., \$11.50, sacks included. MINNESOTA GROWN TURKISH RED WINTER WHEAT, price, bu., \$1.25; 2 1/2 bu., \$3.00; 5 bu., \$5.85, sacks included.

CHOICE RECLEANED TIMOTHY, CLOVER and other GRASS SEEDS at the lowest market prices. Write us for samples and prices.

FARMER SEED CO., No. 60 Ninth St., Faribault, Minn.

ECONOMY PITLESS WAGON AND STOCK SCALES.

No Pit Required.

Metal Frame, 9 inches high.

Steel Joist, Heavy Casting.

Scales shipped complete except the few plank for the flooring, therefore cost of erecting will not exceed \$6.00. Our 5-year guarantee is positively gilded; will replace any defects within ten days after notice free of charge. We save you the cost of an expensive pit and 700 to 900 feet of heavy timber. Scales warranted to be one of the most durable, economical and reliable scales on the market.

Write for particulars. P. O. Box 887.

McDONALD BROS., Pleasant Hill, Mo.

HAY PRESS ALL STEEL

Most Durable and Rapid

SCOTT HAY PRESS CO.

713 W. 12th St. KANSAS CITY MO

LOW RATE HOMESEEKERS' EXCURSIONS.

TUESDAYS August 5th and 19th,
September 2d and 16th,
October 7th and 21st....VIA THE...
MISSOURI PACIFIC RAILWAY

IRON MOUNTAIN ROUTE

To Certain Points in the
WEST AND SOUTHWESTHALF RATES FOR THE ROUND TRIP
(PLUS \$2.00.)

FINAL LIMIT OF TICKETS, 21 DAYS.

STOP-OVERS will be allowed within transit limit of 15 days going after reaching first homeseecker point en route.

For further information or land Pamphlets, Folders, Maps, etc., address any agent of the company, or H. C. TOWNSEND, General Passenger and Ticket Agent, St. Louis, Mo.

FARMS.

A Farm for You
California

The Santa Fe will take you there any day in September or October for only \$33 from Chicago or \$25 from Kansas City.

Corresponding rates from East generally—tickets good in tourist sleepers or chair cars—enjoyable ride on the shortest, quickest, pleasantest line.

Also one fare, plus \$2, round trip to Great Southwest, first and third Tuesdays, August, September, October.

Exceptional opportunities for homeseechers in magnificent San Joaquin Valley. Money-making investments.

Write to A. Andrews, General Agent A. T. & S. F. Ry., 108 N. Fourth St., St. Louis, Mo., for California land folders.

Cheap Excursions

FOR SALE.
A pleasant home, four acres, dwelling, 70-foot outbuilding, barn, fruit trees, small fruit. Good soil, 9 miles west of St. Louis, on Walnut R. R. Now in use for breeding fancy poultry. Particulars on application. Address: MOUNTAIN POULTRY RANCH, New Florence, Mo.

\$1.25-BUYS-1,000

Strawberry Plants

of Klondike, Lady Thompson or Excelsior. Other varieties from \$1.50 per thousand up. Catalogue sent free on application. Send order for 1,000 plants at once.

W. W. THOMAS,
THE STRAWBERRY PLANT MAN, ANNA, ILL.
Please mention this paper when writing.

STARK TREES best by Test—77 YEARS

LARGEST NURSERY,
FRUIT BOOKS FREE. W. C. PAY, Cashier,
STARK BROS., Louisiana, Mo.; Danville, N. Y.; Etc.

Farmers' Handy Wagon

With 4-Inch Tire Steel Wheels

only \$21.95

Low and handy. Saves labor. Wide tires, avoid rutting. Farm use. Will hold up any two-horse load. We also furnish steel wheels to fit any axle. Any size wheel, any width of tire. Catalogue free. Address Empire Manufacturing Co., Quincy, Ill.

But if honey is what you are working for, I would not let them swarm at all, but cut out the queen cells every eight days, which does not seem to stop work-room, and if for comb honey, you should tier up as fast as they need room, and in extracting hives you can do the same or extract. I like to extract as soon as honey is ripe and not tier up more than one high.—Ex.

Home Circle

Written for the RURAL WORLD.
CUPID.

There's a little Love-God astray in the land,
A bow and some arrows he swings in his hand;
He thinks he has come from some wild Gypsy band.

So subtle his art,
They say he is blind, but I doubt it is so,
For through some strange countries he safely must go,
And guard with great caution his arrow and bow.

His quiver and dart,
If this little God is as blind as they say,
Oh, why do his arrows, both night and day,
With deadly precision, speed right on their way,

As under a spell?
He's not to be trusted, no matter what's said,
Unless you are wise, in your day, and
You'll lose your own heart, and besides that, your head.

So I have heard told,
He's a wonderful archer, this Cupid bold,
For while his bright quiver is full as can hold,
There's nothing can buy them, not silver nor gold—

Not one love-tipped dart,
But when you least think it, he'll fall in your feet,
An arrow and quiver and bow most complete;
And, oh, but you'll think that this Cupid is sweet.

And give him your heart,
When dear little Cupid comes straying your road,
And seeks in the wilderness your meek abode,
And finds you are failing to carry your load.

Of heartache and tears,
No matter how snugly you hide you away,
He, sooner or later, will find you some day,
And finding, will leave your sky rosy or grey.

From kisses or fears,
—AGNES BIBBEE.

Written for the RURAL WORLD.
THE DAILY NAP.

I wonder how many of our Home Circle housewives have learned the value of a daily nap or rest. Many women with eight hours' sleep go to bed with the 24 uncomplainingly, but with others a half-hour's perfect rest would do wonders. During the summer season many farmers' wives must arise at a very early hour; sometimes, if there is a little one, the night's rest has been disturbed, but the mother must get up just the same.

From the standpoint of one who has tried it, I want to advocate the value of resting when nature calls for it. I have heard some women fallaciously say: "Oh, no, I never lie down in the daytime," implying that she considers it a sort of laziness. Another common reply when a rest is suggested is: "I go until I drop; when I give up you can know that I am sick."

The wise one, who appreciates the fact that her body is God's temple, and that her duty is to look to its care, and who realizes that while doing this she is fulfilling her duty to herself and family as well as to her Maker, does not need this letter.

To the forever busy dear ones who think they cannot lie down five minutes without waking up with a headache, or who think they haven't the time to rest—let me ask you to try it and to cultivate the resting habit.

Arrange for your rest, take off your shoes, loosen the clothing; if you need an hour's rest slip into a loose gown; close your door on all the world. Explain to the children that mother is tired and is going to rest awhile, and let them amuse themselves where you cannot hear the chatter of their voices. If you are apt to be interrupted, put a sign on your door: "Resting, do not knock." I have found this a great help, as some one is sure to want me just at the moment the first delicious restful sleep comes. Several times when I have neglected to put out the sign my little daughter has slipped in, and finding mother asleep, has put the sign out, so no one else would disturb.

There is a class of people who prefer to "take something"—a tonic—a pill—or anything—just to be doing, and I am sure the "country doctor" will agree with me when I say that many troubles can be swiftly and surely cured by sleep and rest.

Remember, dear mothers, that your duty to home and family may cover many years; that, at least, is as nature intends it. If you allow yourself to go on overworking, when you are older, instead of being a blessing to your family and a continued beam of sunshine in your declining years, you will be a bundle of nerves, nervous and fretful, and have to live with and care for, and the same children who are so dear and upon whom you have lavished your care and strength will wonder why people change so when they grow old.

A writer has wisely said that the mother who is training her children to do without her, is the one who is doing her highest duty.

Early let the children learn to share mother's cares. Take a little time and teach the daughter little tasks, so that you can expect certain things of her and will be able to depend upon their careful performance. It is true that many husbands do not encourage the wives to save themselves. They have seen their mothers make slaves of themselves, and it does not occur to them that their wives need to do differently; they think that "man's work is from sun to sun, and woman never gets her work done." But these husbands can be trained. A little gracious

Beware of Ointments for Catarrh that Contain Mercury.

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescription from reputable physicians, as the damage they will do is to be feared to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure, be sure you get the genuine. It is taken internally and is made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

100 Sold by Druggists. Price 75c per bottle. Hall's Family Pills are the best.

tact will do a great deal, but the woman's influence over the man is a theme for another letter, but let us decide right now to grow old gracefully; lay aside care in our declining years, and the Sunset of Life will be our happiest and most peaceful experience. Then, "life is not less, the heavens are only higher."

MRS. RACHEL ARMSTRONG.
St. Louis Co., Mo.



MRS. ETHEL FOREMAN.

We present to our readers this week the portrait of Mrs. Ethel Foreman of Reno, Nev., who has become well-known to the Home Circle as "Blue Bel's of Missouri." It is a great pleasure to the "New Editor" to make the acquaintance of the old members of the Home Circle, and the receipt of many personal letters of criticism and encouragement has already forged ties of friendship which connect the best valued feature of his incumbency. The editor gladly welcomes to his collection the photographs of correspondents—it crystallizes the acquaintance, which he hopes will ripen as the years pass, into that personal knowledge and communion which is life's highest blessing—the friendship of a friend.

Written for the RURAL WORLD.
A SERMON WITHOUT A TEXT.

Sometimes when we have made a failure of something in which we had hoped to succeed, we think, in our discouragement, that there is nothing so uncertain as success. But we are always rewarded for our labor.

When we put our best efforts, our whole thought, on what we undertake, if we do not succeed we at least gain experience and develop character.

It is pleasant to know that even our everyday, commonplace tasks, when completed, are at their very best. "Commonplace." Well, maybe. But do you know the meaning of the two words "study" and "wife"? These words stand for all that is noble and good in womanhood, and when traced to the original the one means "to give," the other, "weaver." So we, to whom these homely tasks are allotted, can be proud of our occupation if we try to find time for pleasant tasks as well.

It is terrible to think of the many homes where there is always something to be done, with never any time for even flowers, books and fancy work; or maybe a pleasant drive or a long ramble among nature's widespread and ever-changing pictures.

I have often heard people say they had no time to go strolling about the country, I imagine they do not care. Nature's book, with all its wonders, will remain forever closed to them. There is no great need of time to see the beauty about us. Any one living in the country has but to look about him and he will be fully rewarded.

It is such pleasant work—the care of the beautiful flowers—and no matter how often your friends disappoint, and worry you, your well tried friends among the books are always ready to elevate, to soothe and satisfy. If among them are numbered some of the works of Ruskin, of Emerson, of O. W. Holmes, Irving, Dickens, Longfellow—then, I think, there will be no need to "run over for a few minutes," which is not always of the kindest nature.

Fancy work, too, embroidered dollies, comfortable cushions, hemstitched handkerchiefs, useful things knitted and crocheted, any one who can do such work nicely has many pleasant and well spent moments.

Scarcely more than half of August is gone, yet how much it begins to look like fall, the most glorious season of all the year. There is golden red everywhere (an autumn flower) and the pretty painter's brush, with its bright purple clusters. The birds, too, seem to be getting ready for their autumn flight; and how the autumn and katydid drone all day long.

Isn't so very long now till the first frost, till "tis time to strip from the stalk the firm ears of corn and gather the "red-cheeked" apples. Soon, as we walk through the woods, we will hear the nuts drop and see the squirrels gathering their winter's food; will see the leaves flutter and hear them rustle as we walk through them.

Your cities, with their "pomp and pride," after all, can they boast lives so care free, so all-surrounded with good gifts?

Montgomery City, Mo.
PEARL.

Written for the RURAL WORLD.
THE REAL THING.

When we consider the vastness of the influences that surround us, and contemplate the manifold agencies at work in the world to-day, how much we find of the artificial and how little of the reality in every department of human life.

Whether in reform, moral, educational or industrial movements, much of the work that is being done tends more directly towards advancing the interest or ambition of those engaged in promoting the cause than towards success in the accomplishment of the reality of the object agitated.

We come to look closely into and carefully consider the methods adopted and the means exerted to bring out and keep the agitation sufficiently alive to attract public attention, we readily find to the end that they may be the heroes of the occasion, in expectation of reaping for themselves the glory that may accrue, rather than for the real good that may come from the success of the cause advocated.

But when it comes to the real thing—the solid and genuine substance—it is infinitesimal as compared with the superficial surroundings. Those in the front

ranks are there for their own aggrandizement, and when the notoriety of the situation has ceased to act as a motor to push forward their own ambitious aims, they desert to some new agitation, only to renew and continue the course pursued in previous endeavors. Thus the artificial exterior largely covers the reality within and but little of the real thing ever reaches the surface and becomes an established fact.

The real thing in human life is the successful accomplishment of the desired object. The artificial is the pretended effort to enhance a cause only to elevate the standard of the agitators and produce for themselves, a notoriety that they cannot gain in any other way, and is the principal reason of the failure of many of the really beneficial projects materialized for the good of mankind—the real thing having become engulfed in the artificial gliding produced by the selfish desires of its advocates bringing the cause into disrepute and finally to failure and oblivion.

Written for the RURAL WORLD.
STRAY BITS.

THE SONG MIRANDY SINGS.

Mirandy's voice is getting cracked a little. There struts within my heart the keen quaver floats From out her pretty mouth when she attempts the higher notes. An' all in all, though still I love her just as much, I know

She cannot warble like she did some thirty years ago. But lots o' times when I'm at work around the barn I hear

In some old song I'd half forgot, her voice a-ringing clear. A honey-suckle of a tune that round my heart clings—

An' fresh with youthful blossoms are the songs which Mirandy sings. It's "Hard Times Come Again No More," "John Anderson My Joe,"

Or where that fellow talked to Tom 'bout "Twenty Years Ago,"

"Ben Bolt," "Lorena," "Home, Sweet Home," or maybe that of tune That makes you walk with Bobby Burns the banks of "Bonny Doon."

I wouldn't trade a one o' them old melodies we knew For all these new ones writ about a Hannah girl or Lou.

Since we had sweet o' tunes them days an' not these rag-time things, An' somehow love just rushes out the songs Mirandy sings.

The one that of some Maggie tells, "When You and I Were Young," It 'pears t' me's the sweetest thing a mortal ever sung.

An' better yet than that a glimpse of heaven I behold, When to my ears come stealin' "Silver Threads Among the Gold."

Though modern songs an' operas the younger folks may please, I'd rather hear a cracked voice in the old-time melodies

Than Patti's throat or Melba's warble hifalutin' things— The songs of thirty years ago, the songs Mirandy sings.

—Roy Farrell Green.

MEDICINAL VIRTUES OF THE PINEAPPLE.

The partaking of a slice of pineapple after a meal, says the London "Lancet," is quite in accordance with physiological indications, since, though it may not be generally known, fresh pineapple juice contains a remarkably active digestive principle similar to pepsin. This principle has been termed "bromelain," and so powerful is its action upon proteins that it will digest as much as two times its weight within a few hours. Its digestive activity varies in accordance with the kind of protein to which it is subjected. Fibrin disappears entirely after a time. With the coagulated albumen of eggs the digestive process is slow, while with the albumen of meat its action seems first to produce a pulpy gelatinous mass, which, however, completely dissolves after a short time. When a slice of fresh pineapple is placed upon a raw beefsteak the surface of the steak becomes gradually gelatinous, owing to the digestive action of the enzyme of the juice.

Of course, it is well known that digestive action also takes place in other fruits, but when it is considered that an average slice of pineapple will yield nearly two pints of juice it will be seen that the digestive action of the whole fruit must be enormous. The action of this peculiar agent is destroyed in the cooked pineapple, but unless the pineapple is preserved by heat there is no reason why the finest fruit should not retain the digestive power. The active digestive principle may be obtained from the juice by dissolving a large quantity of common salt in it when a precipitate is obtained possessing the remarkable digestive powers just described.

Unlike pepsin, the digestive principle of the pineapple will operate in an acid, neutral, or even alkaline medium, according to the kind of protein to which it is presented. It may, therefore, be assumed that the pineapple enzyme would not only aid the work of digestion in the stomach, but would continue that action in the intestinal tract. Pineapple, it may be added, contains much indigestible matter of the nature of woody fiber, but it is quite possible that the decidedly digestive properties of the juice compensates for this fact.

We are in receipt of a handsome catalog of Barnes' Business College, St. Louis, Mo., setting forth the merits of this well-known school. The book is very handsomely illustrated and gives a full description of the courses of study, tuition rates and such general information as any one would desire who is thinking of entering a business school. We understand that the catalog will be sent to any one interested, and we are sure it would pay any young person to secure a copy and give it careful reading.

KNOWING HOW TO DO THINGS.

It is knowing how to do things that is of value. It is said that a skilled mechanic once sent in the following items in a bill for a small job:

For doing the work \$1.25
For knowing how 25
Total \$1.50

It was the knowing how that added value to his services, not the mere doing. It was the years of discipline, of dry details and drudgery, the years of learning the trade, with little compensation, that gave the value.

Hundreds of boys in this country, today, are bemoaning their small salaries and lack of opportunities, when they are right in the whirlpool of business or trade, the finest school possible for them.



The World's Regulator

Nearly ten million Elgin watches act as one great pendulum in regulating the hours of business, travel and pleasure the world over. Every

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is made of the finest materials by the most skilled hands.

Always look for the watch word "Elgin," engraved on the works of the world's best watches; send for free booklet about watches.

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SALADS AS SUMMER DIET.

Light salads are never more wholesome and appetizing than in summer, when there is no limit to the number of fresh vegetables, herbs and other green things that can be utilized in making them. If the country housewife could only rid herself of the mistaken idea that they are fussy and difficult to prepare she would soon learn to appreciate their appetizing and nourishing properties, as well as their cost. For several reasons this is the best possible time to become a good salad maker. The dishes, spoons and forks as well as every ingredient of a salad must be kept as cold as possible until ready to serve. A plain French dressing is most favored by those who are fond of oil. To make it, put one-fourth of a cup of oil, one-quarter cup of vinegar and three tablespoons of salt in a bowl and beat until thoroughly blended. Then add one tablespoon of vinegar and continue to beat until foamy.

Winter-wheat growers looking for a reliable, sure-crop winter wheat, would do well to sow the Bearded Fife or Reliable Minnesota winter wheat, grown and offered by the Farmer Seed Company of Fairbault, Minn. Of the large number of letters from those who sowed this wheat for several seasons we bring two which show how well it succeeds everywhere:

Gentlemen—Your wheat (Reliable Minnesota, now known as Bearded Fife) yielded at the rate of 42.9 bushels per acre. The yields of our varieties range all the way from 28 to 38 bushels per acre. You will therefore see that your winter wheat has made a good record at this station, and the test of the scale brings it up to the front rank nearly.

W. C. LATTA, Agriculturist.
Agricultural Experiment Station of Indiana.

Mrs. Warren Co., Mo.

Dear Sir:—The ten bushels of your Bearded Fife Winter Wheat I sowed last fall came through the winter all right, and looks fine now, while thirty acres which I sowed with wheat of my own growing all winter-killed, and I will have to plow this under. I wish I had sown more of your winter wheat.

FRED SHAKE.

DON'TS FOR GIRLS.

Don't take liberties with verity. Men especially shun girls who exaggerate. Don't stare. Girls do too often, then, unwittingly recent return stares from strangers.

Don't boast. If you are one of the gods' favorites, it will be manifested. Boasting is vulgar.

Don't swing your arms while walking. The habit is common. It looks coarse. Girls think it looks athletic.

Don't wear jewelry in the morning. The nobodies do, and if you glitter in daylight you will be taken for a nobody.

Don't use superlatives. Repetitive life that are used to the things of life that are desirable admire, but never gush.

Don't borrow money or jewelry from your chums. The first you may find difficult to pay, and the last if lost must be replaced.

Don't rob your old father of comforts in order to be stylish. The wage earner should be given his rights before fashion has her privileges.

Don't go out with men unless you are well acquainted with their habits, station in life and even financial position in a degree, for you may be taking from another needed expenditure.

Don't go into debt. It is remorseless, it robs one of sleep, it turns day into night, and it harasses the brain and body. Better a few things paid for than many with debts—Exchange.

I hear it is charged against me that I sought to destroy institutions. But really I am neither for nor against institutions.

(What indeed have I in common with them, or what with the destruction of them?)

Only I will establish in the Manhattan and in every city of these states, inland and seaboard, and in the fields and woods, and above every keel, little or large, that dents the water.

Without edifices, or rules or trustees, or any argument.

The Institution of the Dear Love of Comrades.

"Invincible, Unsurpassable, Without a Peer,"
Writes a regular subscriber, who has read it for many years, of the
Twice-a-Week Issue of the
St. Louis Globe-Democrat
and this is the unanimous verdict of its more than half a million readers. It is BEYOND ALL COMPARISON, the biggest, best and cheapest national news and family journal published in America. It is a **STRICTLY REPUBLICAN** in politics, but is above all a **NEWSPAPER**, and gives all the news promptly, accurately and impartially. It is **UNBIBLIOTHECARIAN** in its character. Merchant or Professional man who desires to keep thoroughly posted, but has not the time to read a large daily paper, while the great variety of well-selected reading matter makes it an **INVALUABLE HOME AND OFFICE PAPER**.
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Poultry
WEAK PLACES IN ARTIFICIAL BROODING.
Editor RURAL WORLD: People can overwork and get so tired that they can sleep standing up or sitting down, but it is not the natural way, it does not bring the natural rest. This way of sleeping is no more unnatural for people than it is for a little chick to lie down and sleep. The writer is not a scientist, a professor, or even an expert, much less a good writer, yet my opportunities for making discoveries are good. I have discovered that little chicks, as well as birds, and all animals are born into this part of the world to immediately adjust themselves to what people call comfortable temperatures (70 to 80 degrees), even infants are not excepted. The popular idea with brooders is to start the chicks off under a temperature of nearly 100 and gradually lower it to 75 or 80. Where this theory originated no one knows, but this is not what I am getting at.
On a hot day this season I was watching a hen and brood of chicks. The hen was panting and the chicks had their mouths open, yet the chicks run under a brooder and went to sleep. I had seen this same thing over and over, but never had given it any thought. I went and picked up one of the chicks, and it tried to get away. I laid it in one hand and put the other hand on its back, and in a few minutes it was asleep. After thinking awhile I remembered that my mother had raised pet chicks 40 years ago by putting them in a lined basket with a cloth bagging down on their backs. No other heat than their own bodies were applied, yet the temperature outside of the basket could be most anything from freezing to warm. Then a circumstance that happened ten years ago, came up for thinking about. The circumstance was this: Towards the latter part of April a light shift of snow fell during the night; next morning while doing the chores I noticed a hen coming up from a slough with some small chicks; they were making slow progress, yet just the same she trailed seven little chicks to the hen house through snow deep enough to make tracks. I followed the tracks back and found the nest some 500 feet from the poultry house with seven empty shells. While thinking back over this circumstance an occurrence that happened in my own town here came to mind. W. F. Holcomb set a Partridge Coochin hen two years ago in early March. When the hatch came off the weather was moderate, but when the chicks were some ten days old and doing fine it turned suddenly cold one night. The hen was hovering the chicks in the corner on a bare barn floor. Next day Mr. Holcomb noticed that the chicks got around queer, and he examined them and found their feet had been frozen. In a few days their frozen feet came off, but just the same the chicks lived and grew into big healthy fowls. This is no fish story, but the inexperienced fowler be credulous: Experienced poultry raisers by the hen method will not doubt a word of my statement. If they have had a long and varied experience they will remember similar occurrences, and yet (like myself) attach perhaps attaching too much importance to the circumstances at the time. Now to my discovery: It's as simple as rolling off a log. The little chicks have sleepy nerves on their backs, and your Uncle Jack is here to tell you that if you apply something for these nerves to get up against that they will generate enough heat with their own bodies to keep them warm enough in any ordinary weather (60 to 80 degrees) if the chicks are in most any kind of box that will hold a large portion of the heat generated. A box full of little chicks makes just as much heat as a box full of hens. See?
Most any kind of an old hen can keep a brood of chicks comfortable hovering out of doors when the weather is quite cool; don't imagine for a minute that she applies 95 to 100 degrees all over said chicks; not by any means. She applies a little direct heat to their backs, but their legs are just as cool as her legs, and the hen's body is perhaps no warmer than their bodies, except the protection the feathers give her and even then no one has proved that down on the small chick does not protect it to some extent.
While I am at it I want to make another statement that cannot be disputed: It is simply the mortality of breeder chicks that reflects on the method of artificial hatching through creating a suspicion that incubator chicks may not be as strong. A mistaken idea, of course, but I predict that unless breeder methods improve that incubators will be another twenty years trying to convince all the poultry raisers that it is a profitable way to hatch eggs.
But breeder methods will improve. Some of the theories are so absurd that real poultry raisers will go to thinking on their own account. I would not like to be understood as advocating cold brooders

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